

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE FORT LOUDOUN LAKE WATERSHED

- 4.1. **Background.**
- 4.2. **Characterization of HUC-10 Subwatersheds**
 - 4.2.A. 0601020101 (Little River)
 - 4.2.B. 0601020102 (Tennessee River)

4.1. BACKGROUND. This chapter is organized by HUC-10 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 1998 303(d) list
- iii. Description of nonpoint source contributions

The Fort Loudoun Lake Watershed (HUC 06010201) has been delineated into two HUC 10-digit subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 1.1 beta (developed by Tetra Tech, Inc for EPA Region 4) released in 2000.

WCS integrates with ArcView® v3.2 and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

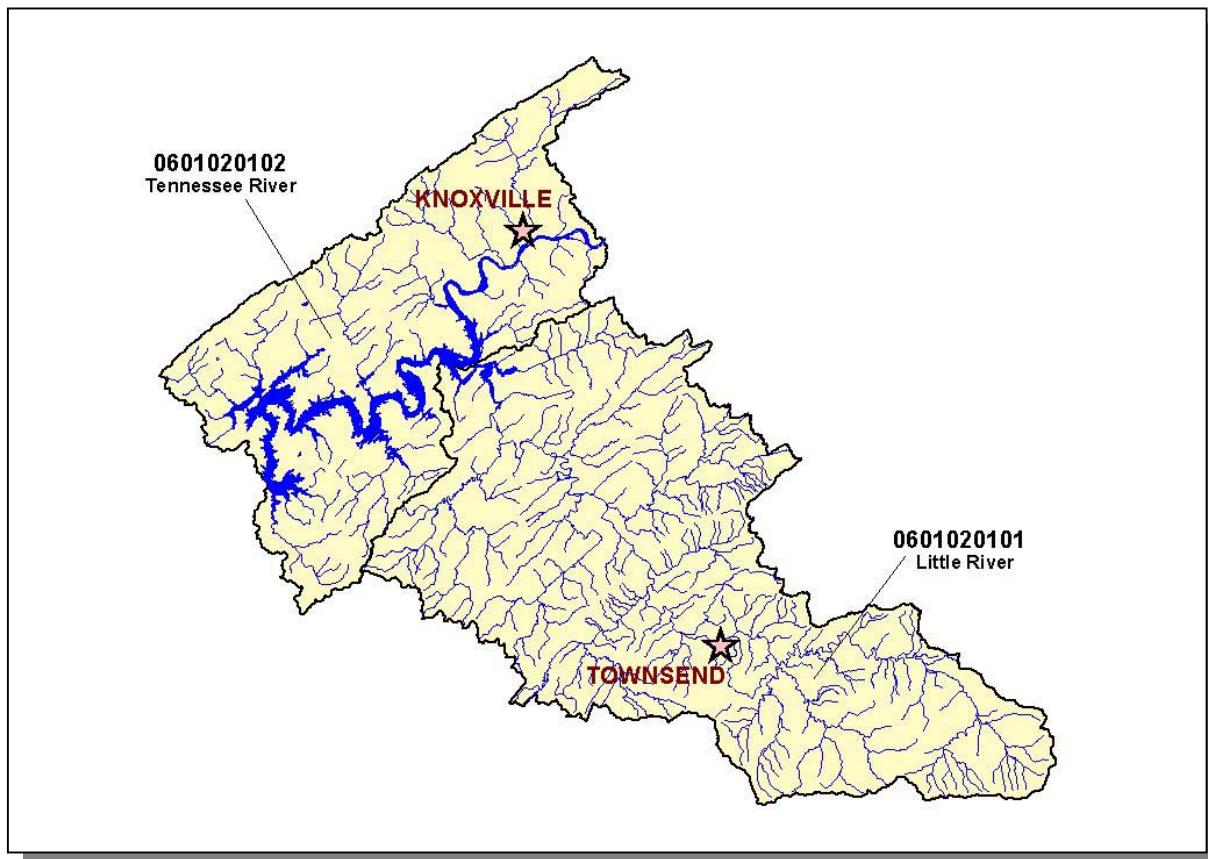


Figure 4-1. The Fort Loudoun Lake Watershed is Composed of Two USGS-Delineated Subwatersheds (10-Digit Subwatersheds). Locations of Knoxville and Townsend are shown for reference.

4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Fort Loudoun Lake Watershed.

HUC-10	HUC-12
0601020101	060102010101 (Little River)
	060102010102 (Middle Prong Little River)
	060102010103 (Little River)
	060102010104 (Little River)
	060102010105 (Little River)
	060102010106 (Little River)
	060102010107 (Pistol Creek)
	060102010108 (Stock Creek)
060102010102	06010201010201 (Tennessee River)
	06010201010202 (First Creek)
	06010201010203 (Second Creek)
	06010201010204 (Third Creek)
	06010201010205 (Tennessee River)
	06010201010206 (Lackey Creek)
	06010201010207 (Fort Loudoun Lake)
	06010201010208 (Ten Mile Creek)
	06010201010209 (Turkey Creek)
	06010201010210 (Ish Creek)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

4.2.A. 0601020101.

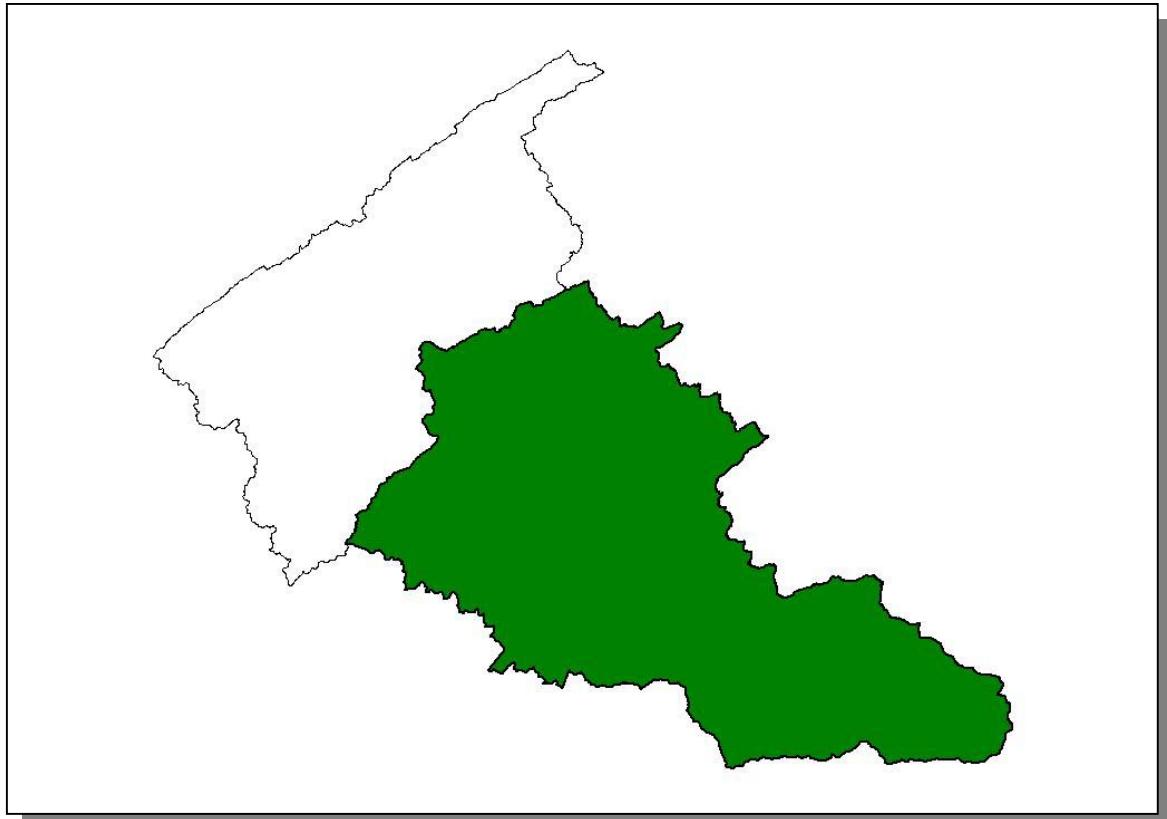


Figure 4-2. Location of Subwatershed 0601020101. All Fort Loudoun HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.A.i. General Description.

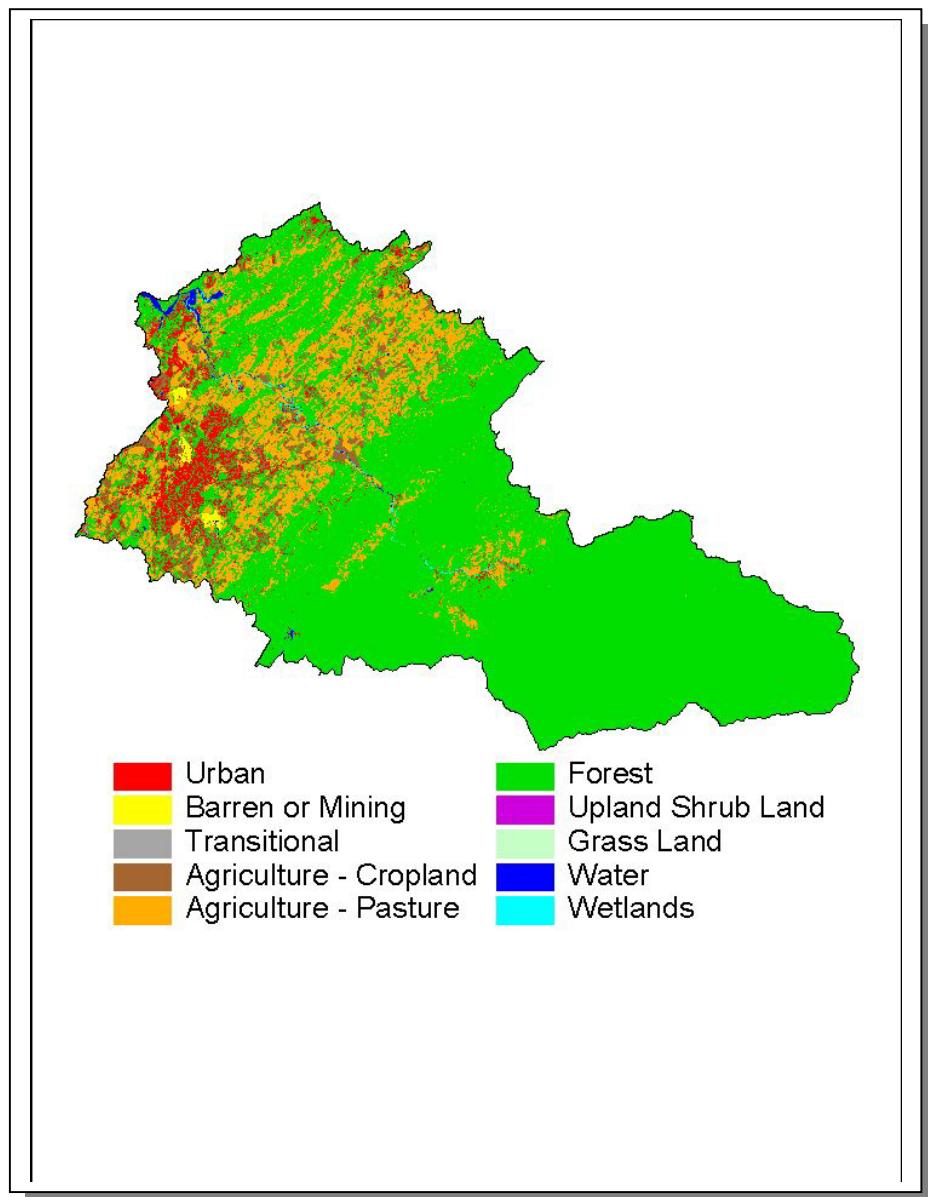


Figure 4-3. Illustration of Land Use Distribution in Subwatershed 0601020101.

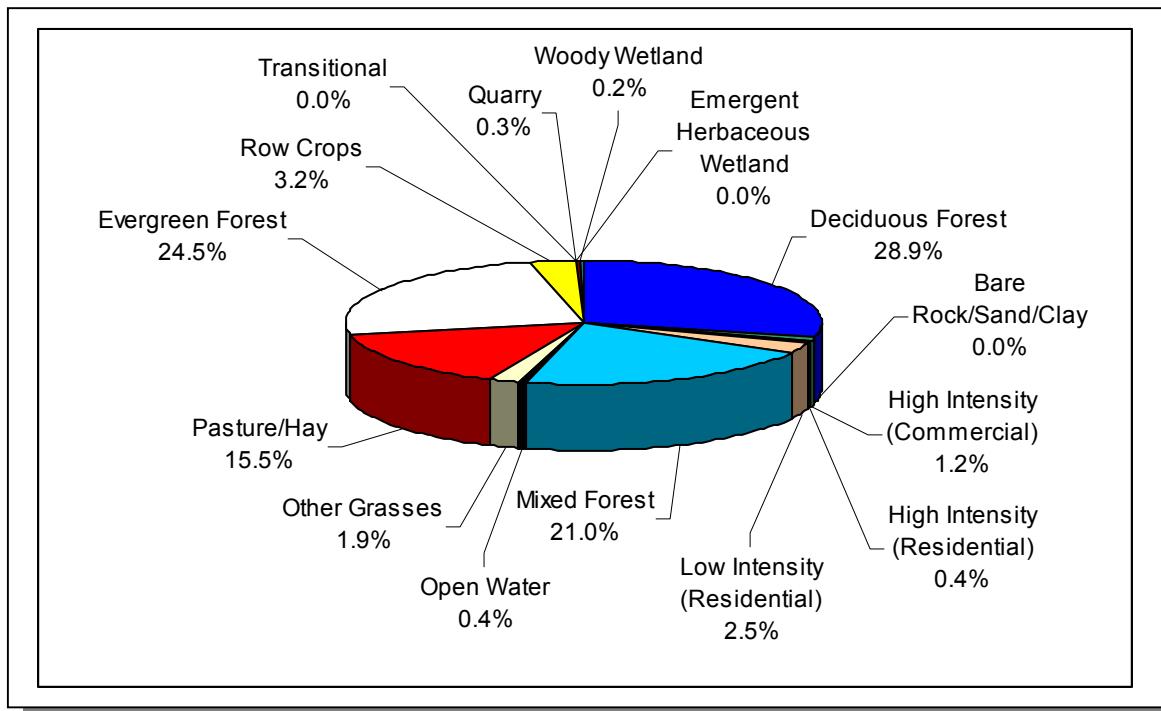


Figure 4-4. Land Use Distribution in Subwatershed 0601020101. More information is provided in Fort Loudoun-Appendix IV.

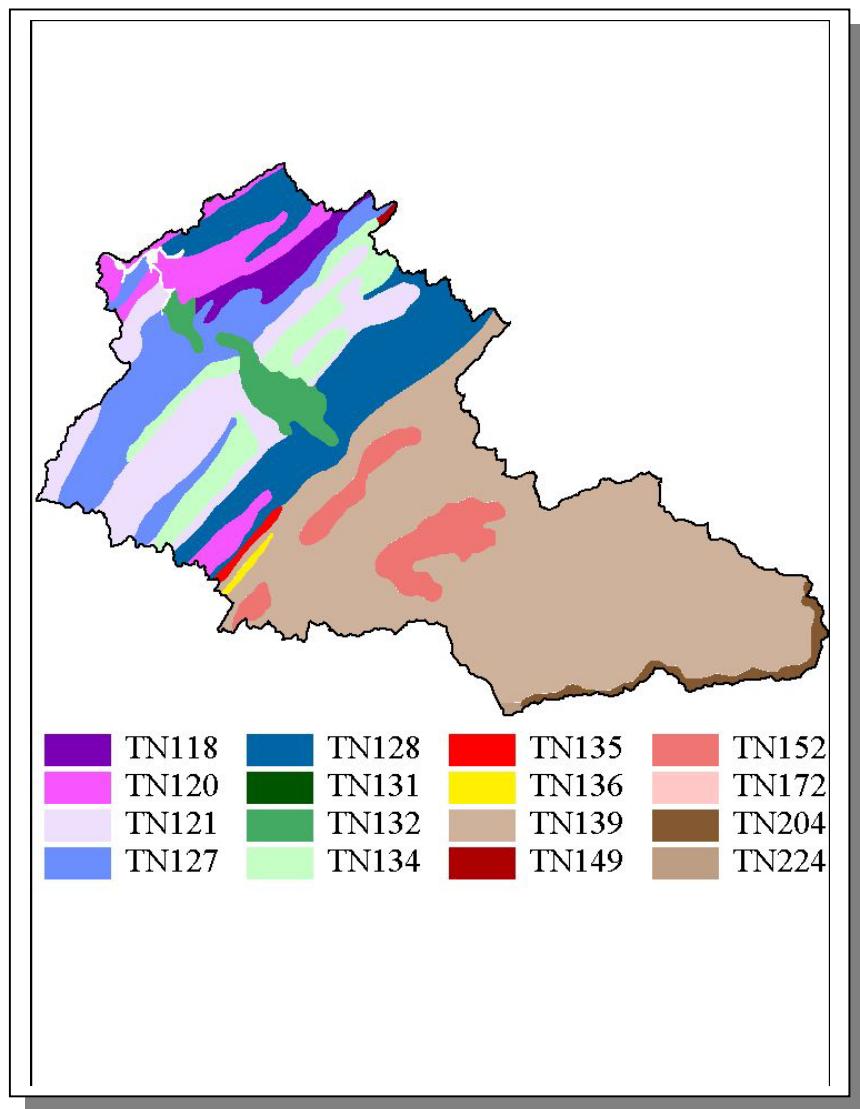


Figure 4-5. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020101.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN118	0.00	C	6.52	5.12	Loam	0.29
TN120	0.00	B	1.68	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN127	3.00	C	1.31	5.20	Loam	0.35
TN128	0.00	C	1.30	6.53	Clayey/Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN132	0.00	B	1.46	5.38	Loam	0.36
TN134	0.00	B	1.38	5.18	Loam	0.31
TN135	0.00	C	1.30	5.84	Loam	0.33
TN136	0.00	B	3.16	5.11	Loam	0.27
TN139	0.00	C	11.84	4.82	Loam	0.20
TN149	1.00	B	1.29	5.01	Loam	0.30
TN152	0.00	B	2.11	5.26	Loam	0.31
TN172	0.00	B	3.87	5.13	Loam	0.26
TN204	0.00	B	3.95	4.80	Sandy Loam	0.19
TN224	1.00	B	3.97	5.27	Loam	0.24

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020101. More details are provided in Fort Loudoun-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Blount	85,969	100,218	48.04	41,301	48,146	16.6
Knox	335,749	365,900	4.4	14,784	16,111	9.0
Sevier	51,043	62,774	13.57	6,927	8,519	23.0
Totals	472,761	528,892		63,012	72,776	15.5

Table 4-3. Population Estimates in Subwatershed 0601020101.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Alcoa	Blount	6,400	2,892	2,799	88	5
Knoxville	Knox	165,121	76,453	74,884	1,521	48
Maryville	Blount	19,208	8,280	7,478	802	0
Rockford	Blount	676	260	14	242	4
Townsend	Blount	386	238	19	216	3
Total		191,791	88,123	85,194	2,869	60

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0601020101.

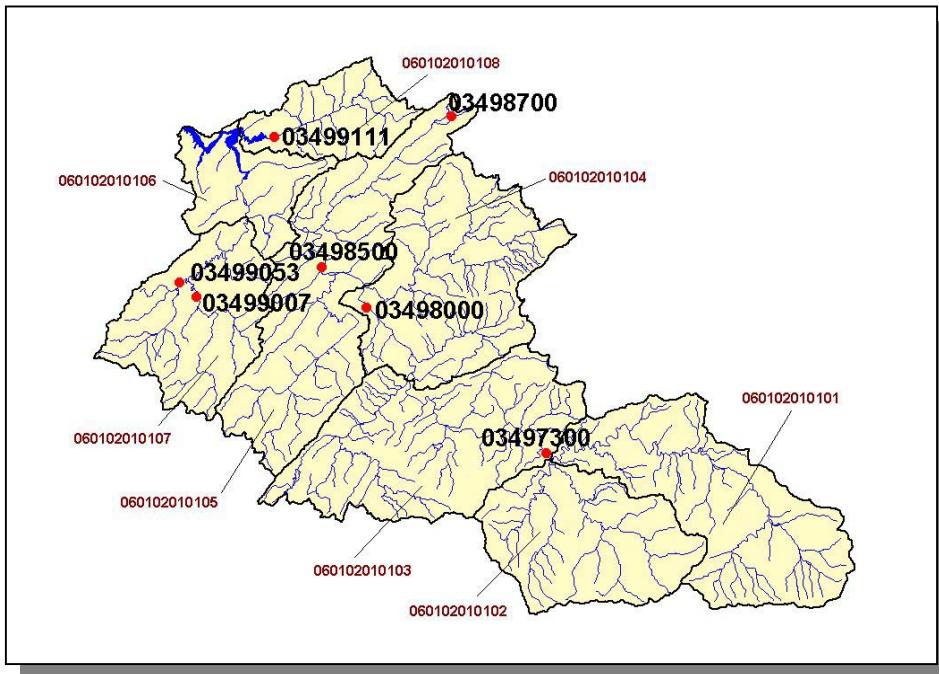


Figure 4-6. Location of Historical Streamflow Data Collection Sites in Subwatershed 0601020101. Subwatershed 0601020101, 0601020102, 0601020103, 0601020104, 0601020105, 0601020106, 0601020107, and 0601020108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

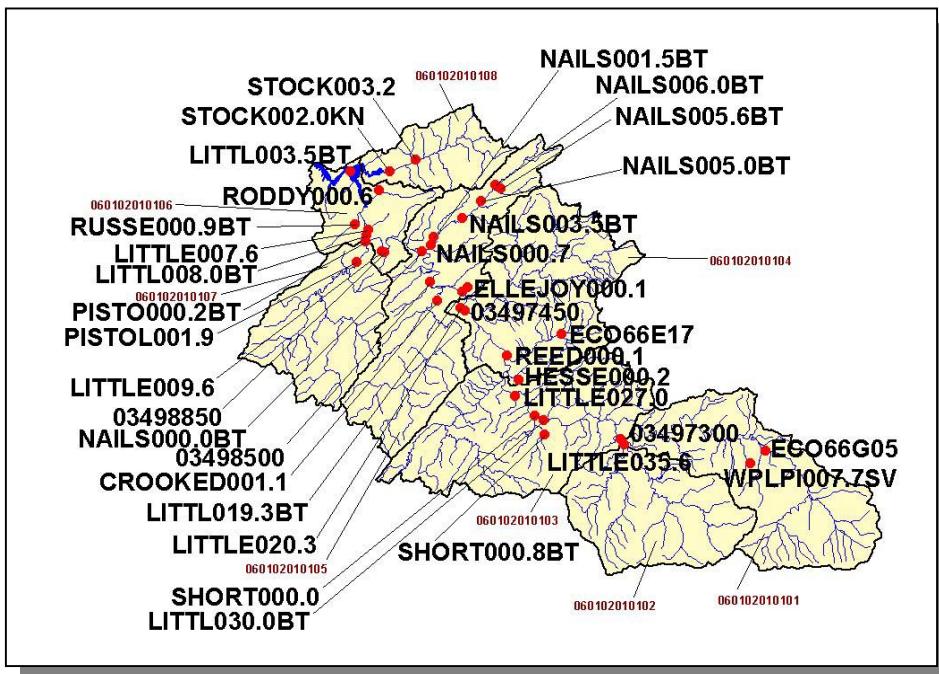


Figure 4-7. Location of STORET Monitoring Sites in Subwatershed 0601020101. Subwatershed 0601020101, 0601020102, 0601020103, 0601020104, 0601020105, 0601020106, 0601020107, and 0601020108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

4.2.A.ii. Point Source Contributions.

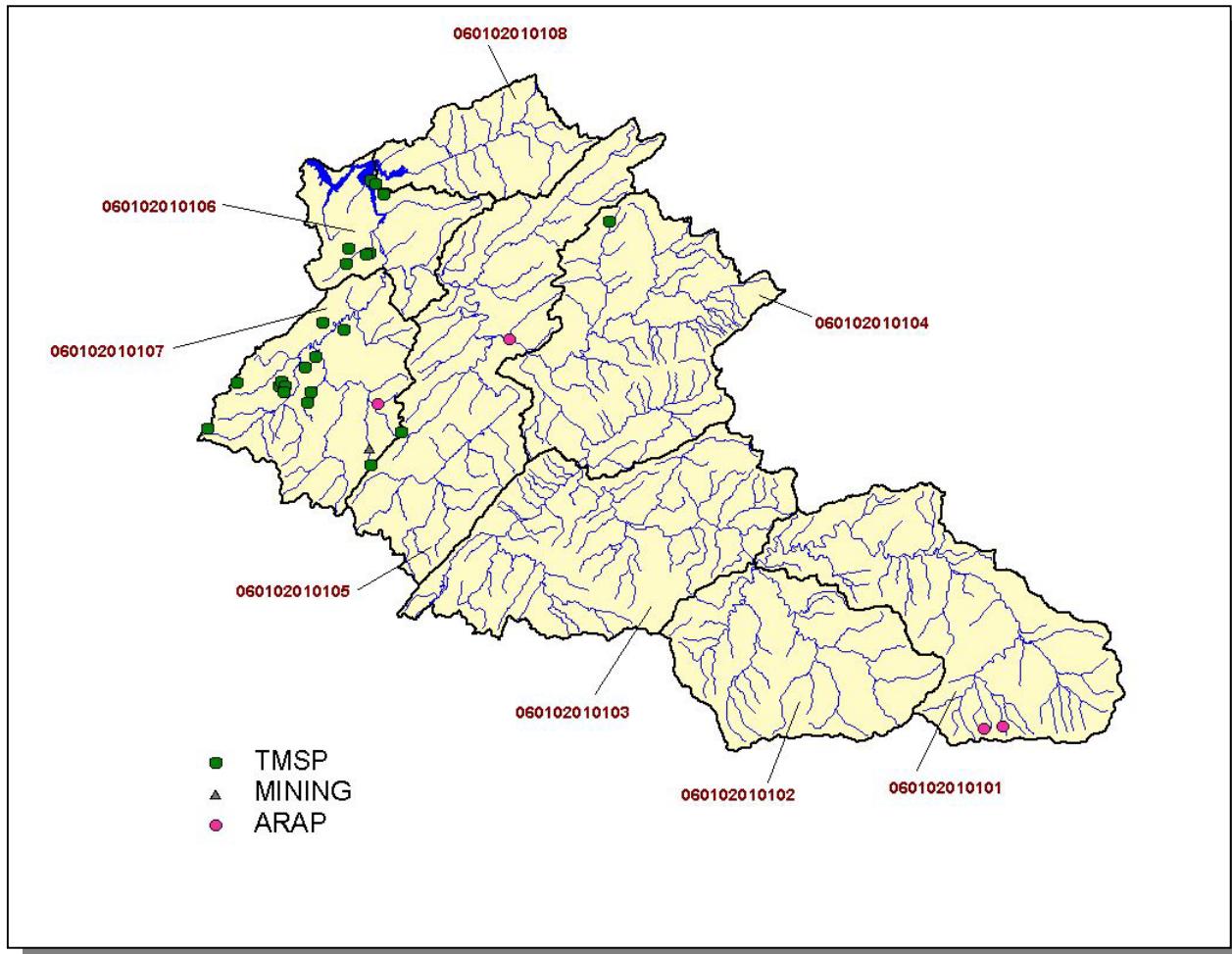


Figure 4-8. Location of Active Point Source Facilities in Subwatershed 0601020101.
Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in the following charts.

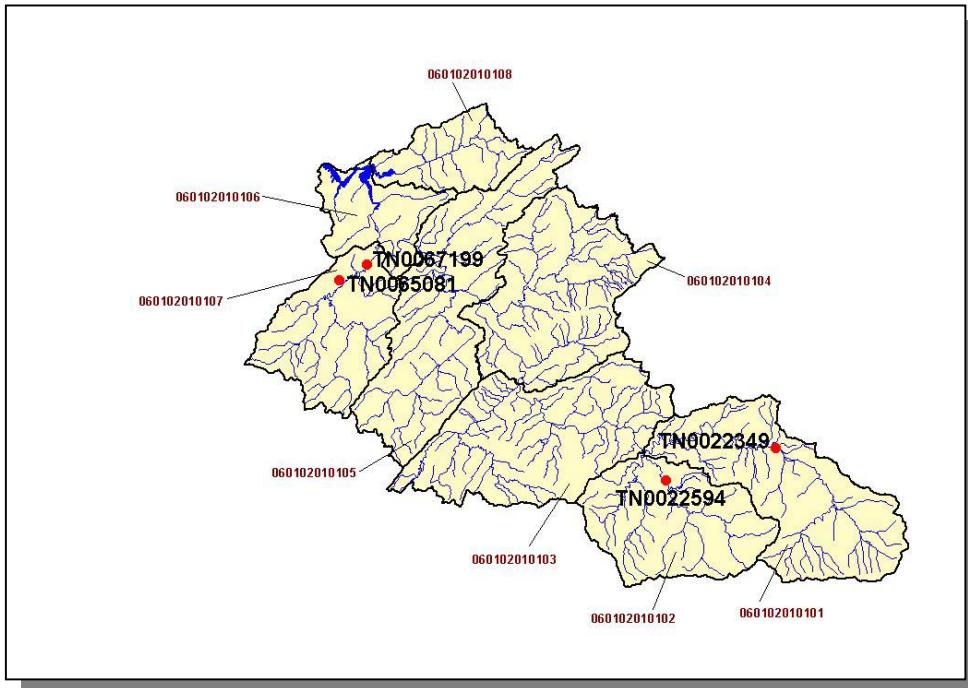


Figure 4-9. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

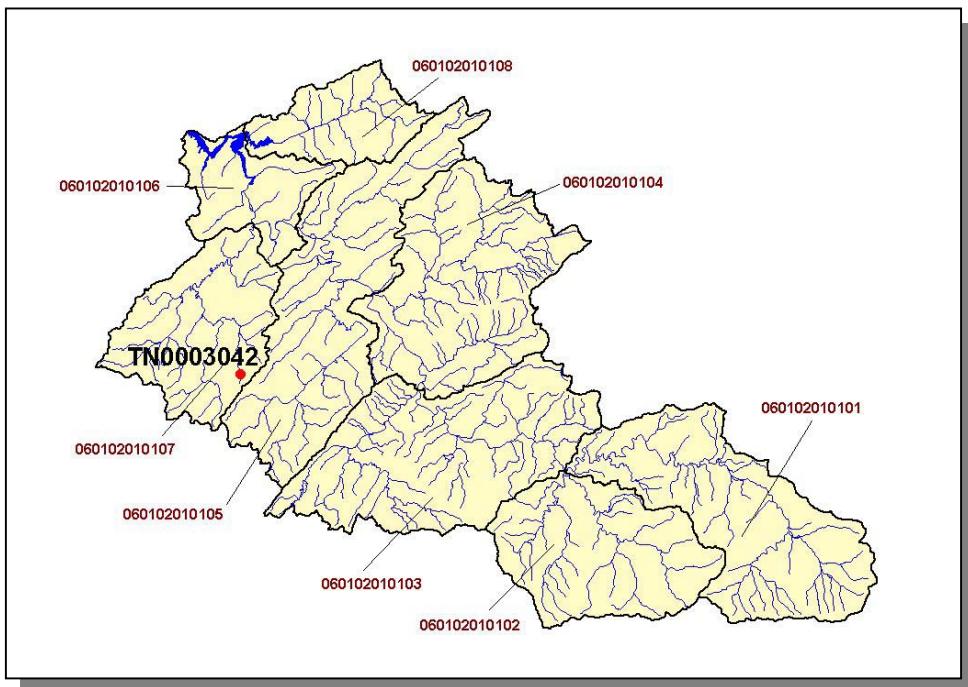


Figure 4-10. Location of Active Mining Sites in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

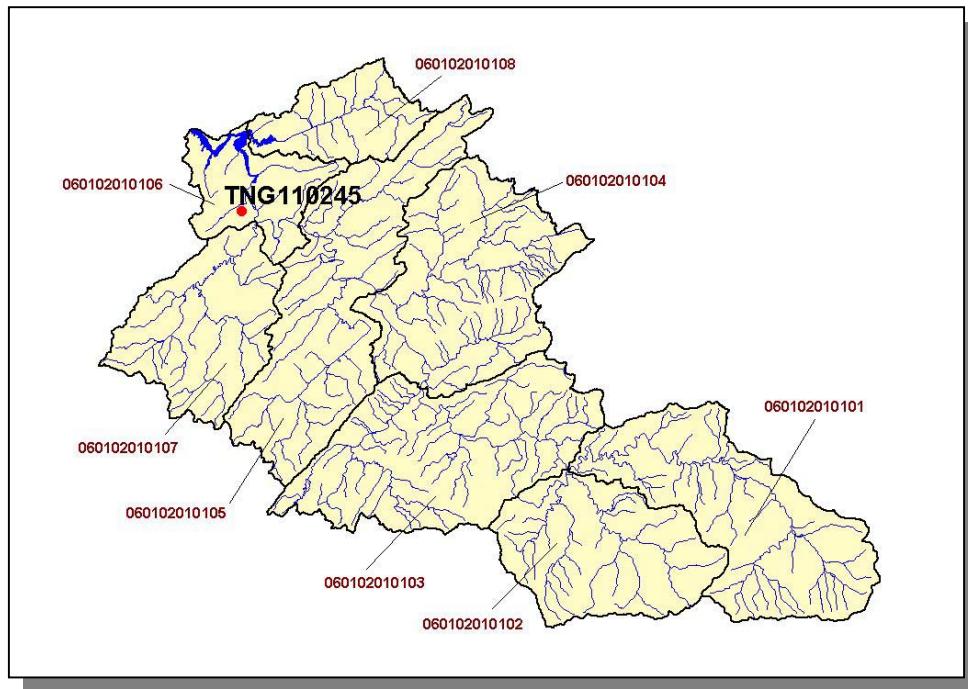


Figure 4-11. Location of Ready Mix Concrete Facilities in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

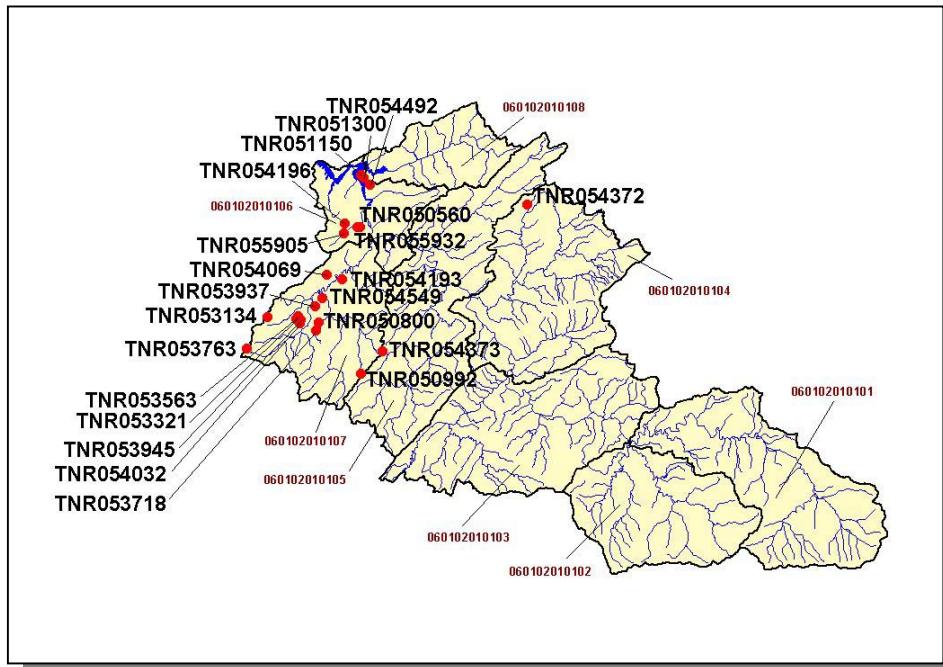


Figure 4-12. Location of TMSP Facilities in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

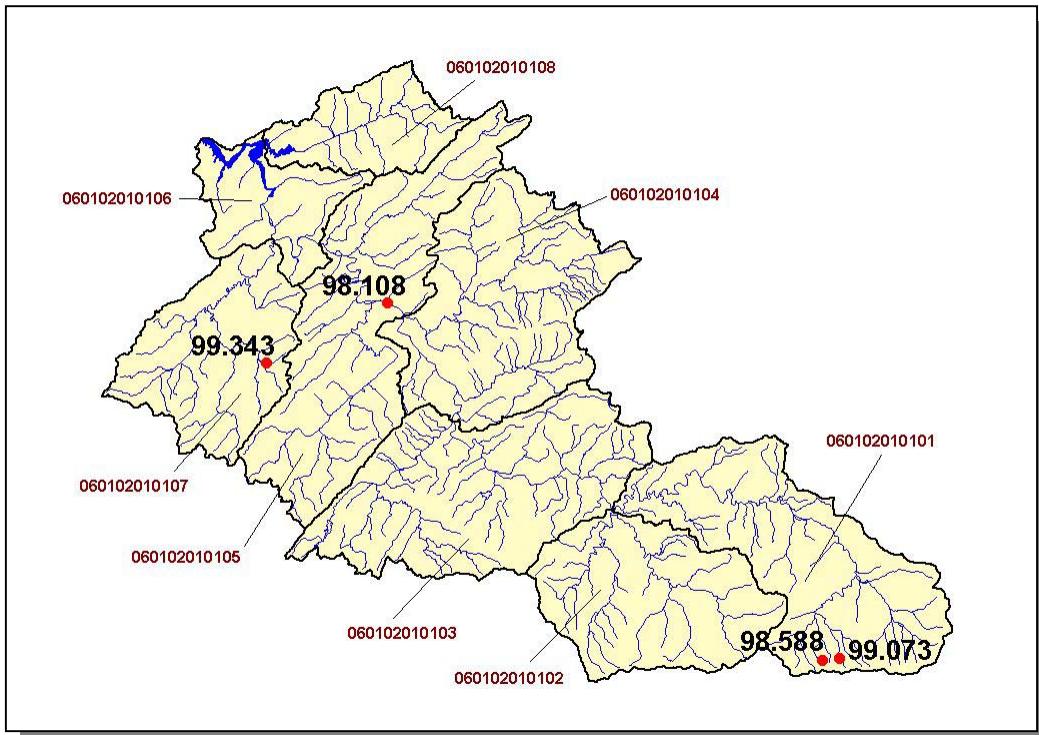


Figure 4-13. Location of ARAP Sites (Individual Permits) in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There are two NPDES facilities discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0601020101:

- TN0065081(Alcoa) discharges to a wet weather conveyance to Pistol Creek @ RM 27.5, to Pistol Creek @ RM 4.7, to an unnamed trib to Pistol Creek, to an unnamed trib to Springfield Branch, and to a sinkhole
- TN0067199 (Alcoa) discharges to wet weather conveyances to Duncan Creek and Russell Branch, to Russell Branch @ RM 2.2, and to Duncan Creek @ RM 0.6

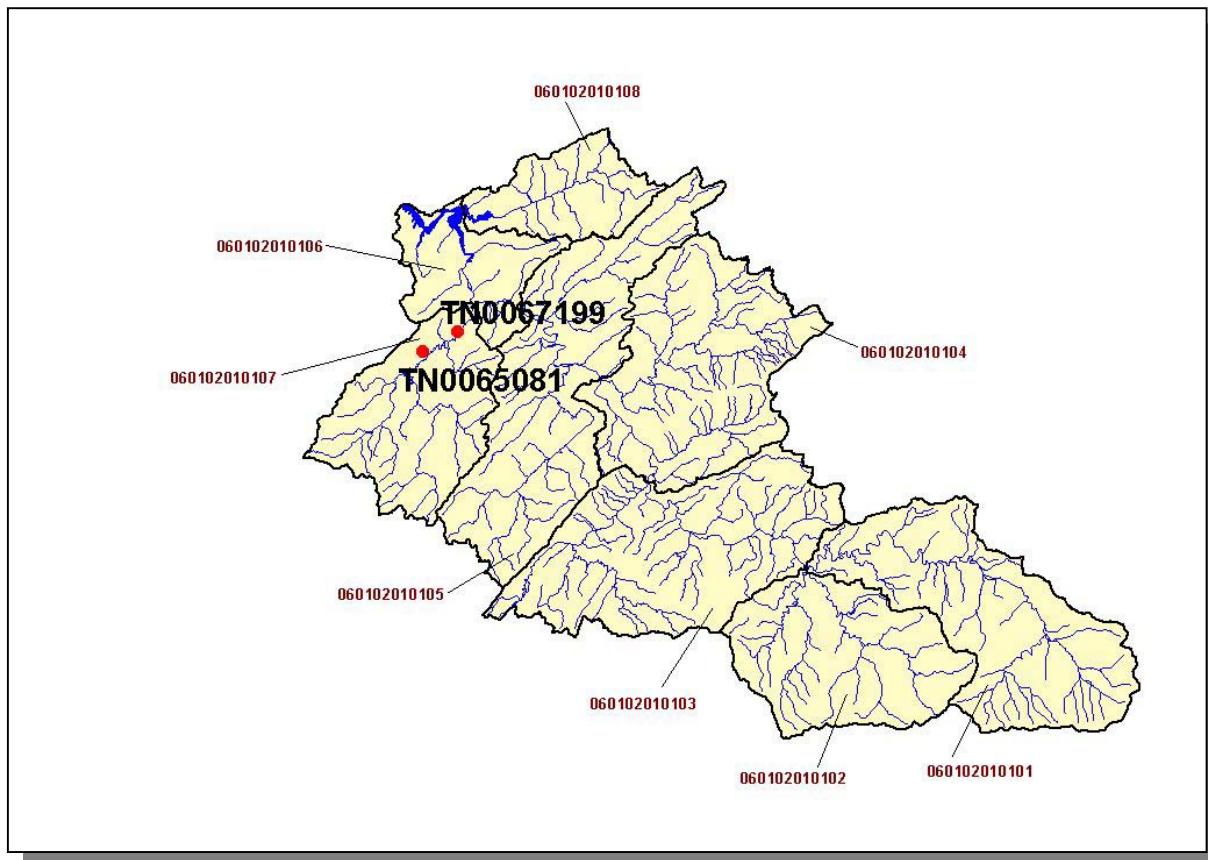


Figure 4-14. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0601020101. Subwatershed 060102010101, 060102010102, 060102010103, 060102010104, 060102010105, 060102010106, 060102010107, and 060102010108 boundaries are shown for reference. More information is provided in Fort Loudoun-Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0065081	5.17	8.60	5.56	4.72	1.67200
TN0067199	0.00	0.00	0.00	0.00	0.64400

Table 4-5. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020101. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	COD	BOD ₅	Cr	Fe	Zn	CN
TN0065081	X			X	X	X	X
TN0067199		X	X		X		

Table 4-6. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020101. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); COD, Chemical Oxygen demand; BOD₅, Biochemical Oxygen Demand (5-Day).

PERMIT #	CBOD ₅	pH	WET	NH ₃	AI	Zn	Cr	CN	TRC	F (SOLUBLE)	TSS	DO
TN0065081	X	X	X	X	X	X	X	X	X	X	X	X
TN0067199	X	X	X	X	X	X	X	X	X		X	X

Table 4-7a. Inorganic Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020101.
CBOD₅, Carbonaceous Biochemical Oxygen Demand; WET, Whole Effluent Toxicity; TRC, Total Residual Chlorine; TSS, Total Suspended Solids; DO, Dissolved Oxygen.

PERMIT #	PCB	BENZOPYRENE	OIL and GREASE	PHENOL
TN0065081		X	X	
TN0067199	X		X	X

Table 4-7b. Organic Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020101.
PCB, Polychlorinated Biphenyls.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
8,717	17,986	949	24	32,711	386	269

Table 4-8. Summary of Livestock Count Estimates in Subwatershed 0601020101. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), “Cattle” includes heifers, heifer calves, steers, bulls and bull calves; “Chickens” are layers 20 weeks and older; “Chickens Sold” are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Knox	127.5	127.0	2.2	8.2
Sevier	254.5	127.4	0.3	0.9
Totals	547.5	324.3	4.3	18.4

Table 4-9. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0601020101.

CROPS	TONS/ACRE/YEAR
Corn (Row Crops)	12.35
Soybeans (Row Crops)	15.54
Tobacco (Row Crops)	16.31
Grass (Hayland)	0.19
Legume/Grass (Hayland)	0.07
Grass (Pastureland)	0.32
Grass, Forbs, Legumes (Mixed Pasture)	0.28
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Wheat (Close Grown Cropland)	6.27
Oats (Close Grown Cropland)	0.32
Summer Fallow (Other Cropland)	3.31
Other Land in Farms	0.14
Nonagricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.27

Table 4-10. Annual Estimated Total Soil Loss in Subwatershed 0601020101.

4.2.B. 0601020102.

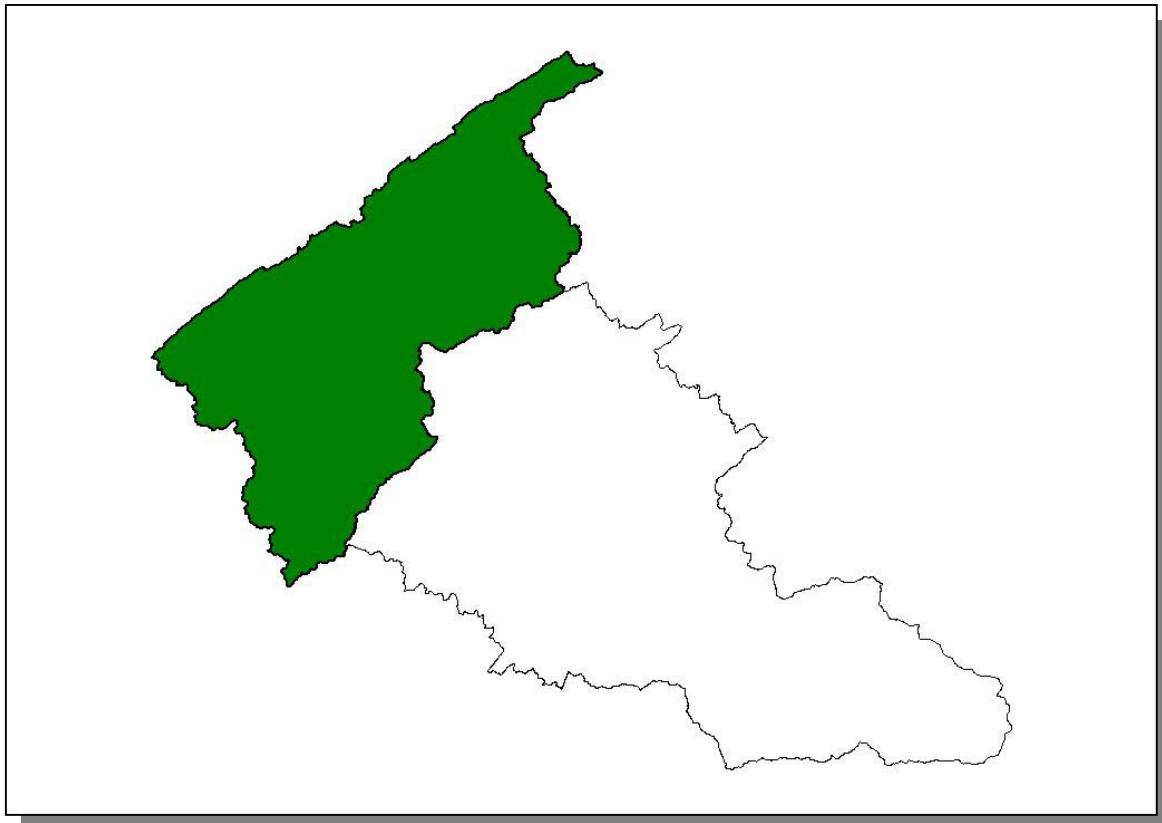


Figure 4-15. Location of Subwatershed 0601020102. All Fort Loudoun HUC-10 subwatershed boundaries in Tennessee are shown for reference.

4.2.B.i. General Description.

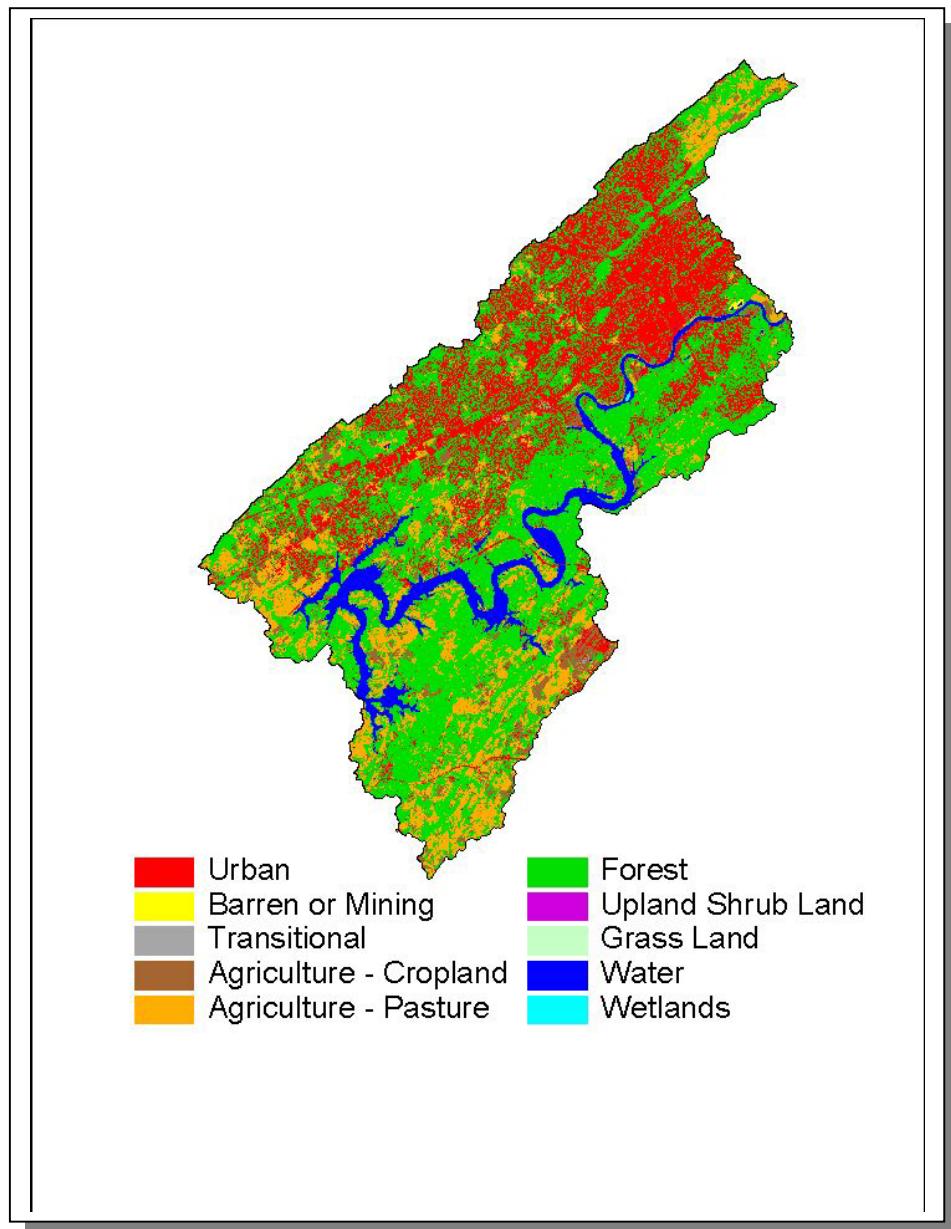


Figure 4-16. Illustration of Land Use Distribution in Subwatershed 0601020102.

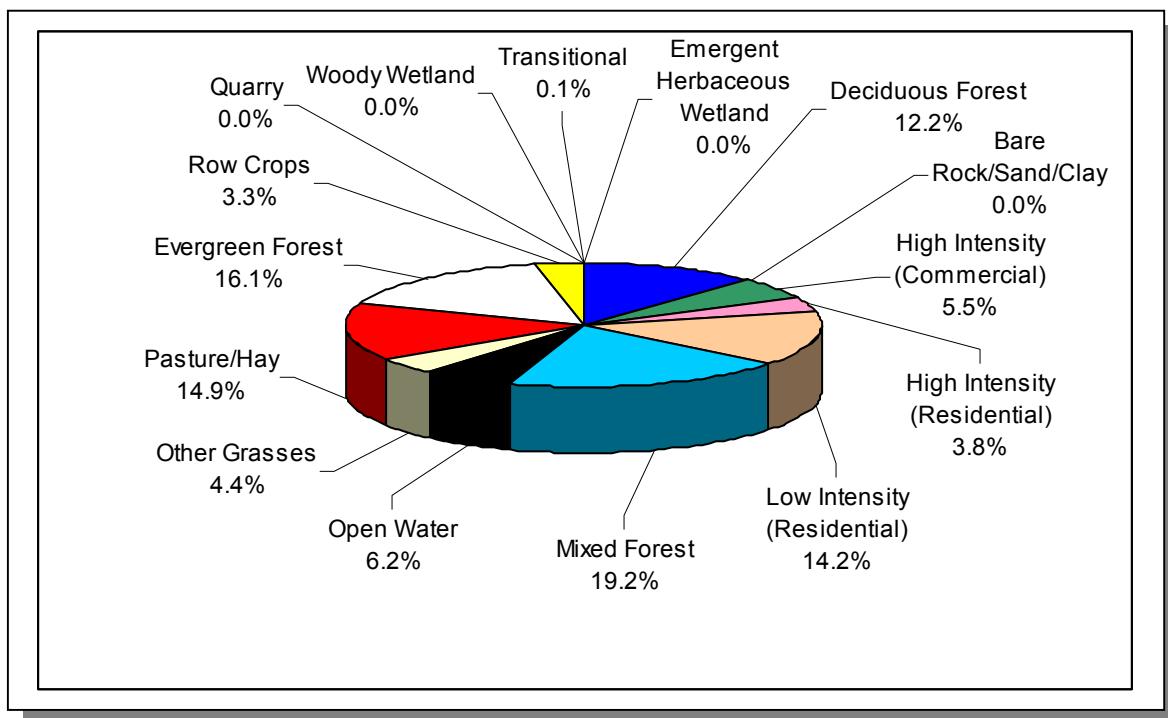


Figure 4-17. Land Use Distribution in Subwatershed 0601020102. More information is provided in For Loudoun-Appendix IV.

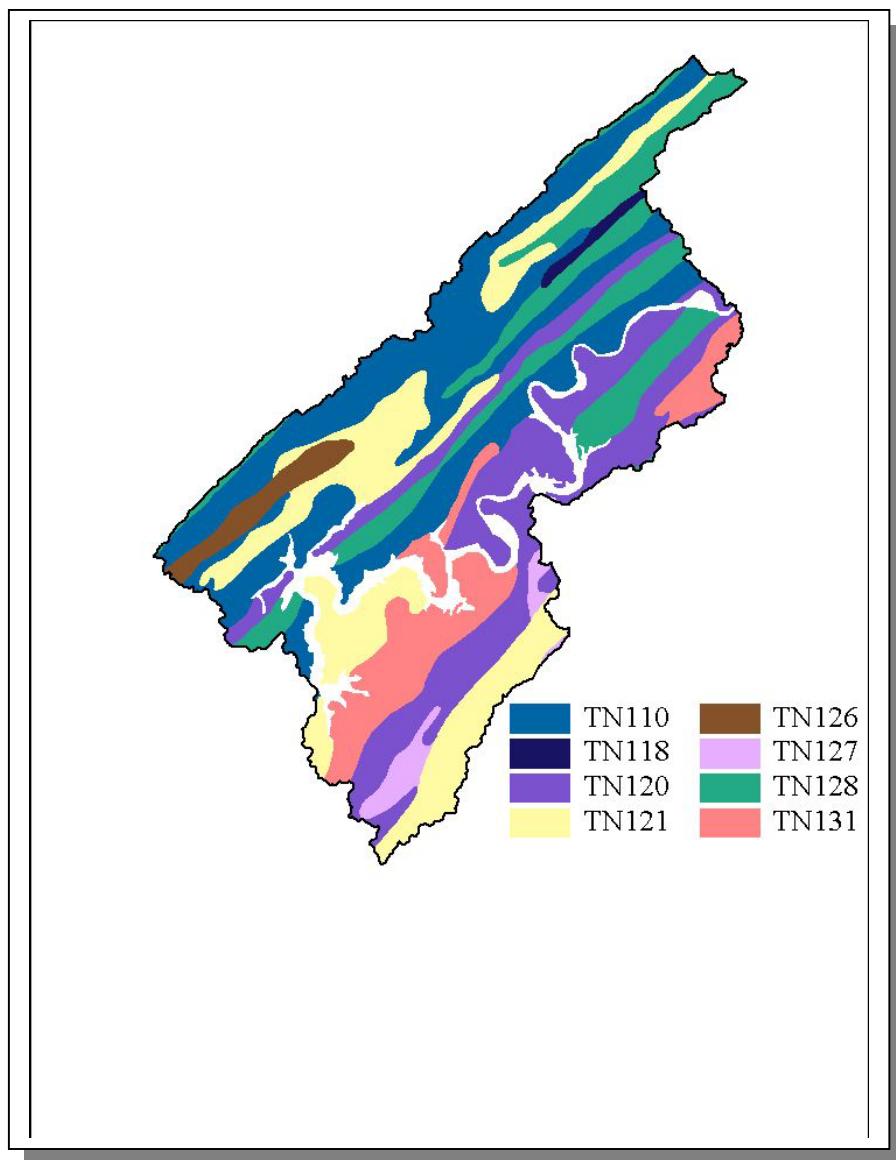


Figure 4-18. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020102.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN118	0.00	C	6.52	5.12	Loam	0.29
TN120	0.00	B	1.68	5.11	Loam	0.27
TN121	0.00	B	1.30	5.21	Loam	0.33
TN126	19.00	C	1.30	5.12	Loam	0.33
TN127	3.00	C	1.31	5.20	Loam	0.35
TN128	0.00	C	1.30	6.53	Clayey Loam	0.26
TN131	0.00	C	1.17	4.95	Silty Loam	0.33

Table 4-11. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0601020102. More information is provided in Fort Loudoun-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Blount	85,969	100,218	10.87	9,345	10,894	16.6
Knox	335,749	365,900	32.37	108,687	118,447	9.0
Loudon	31,255	38,245	0.95	297	364	22.6
Total	452,973	504,363		118,329	129,705	9.6

Table 4-12. Population Estimates in Subwatershed 0601020102.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Alcoa	Blount	6,400	2,892	2,799	88	5
Farragut	Knox	12,804	44,463	3,392	1,064	7
Friendsville	Blount	786	334	17	308	9
Knoxville	Knox	165,121	76,453	74,884	1,521	48
Maryville	Blount	19,208	8,280	7,478	802	0
Total		204,319	132,422	88,570	3,783	69

Table 4-13. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0601020102.

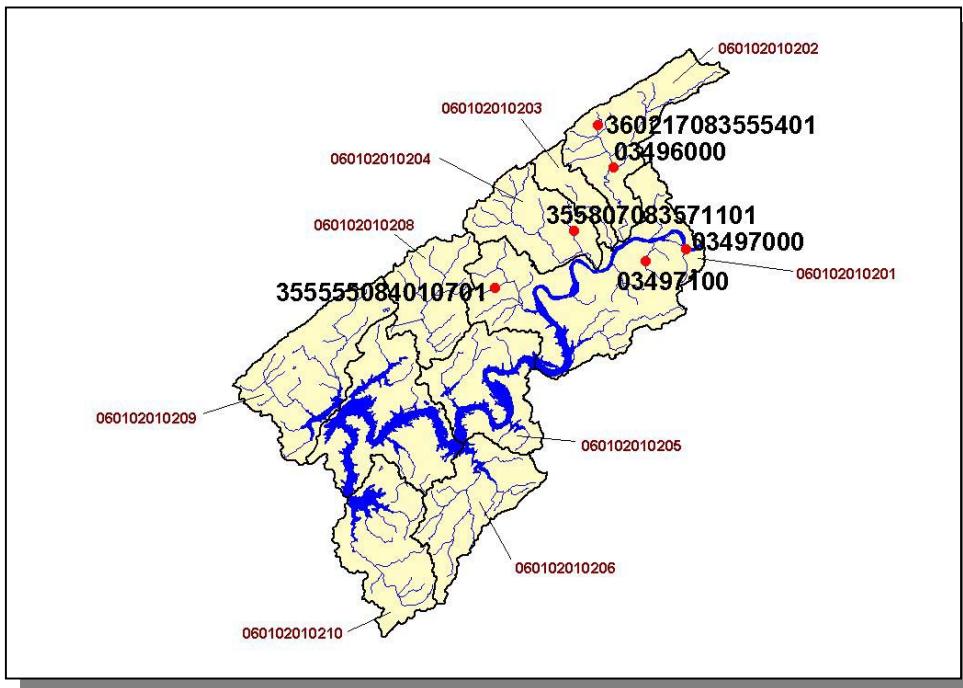


Figure 4-19. Location of Historical Streamflow Data Collection Sites in Subwatershed 0601020102. Subwatershed 06010201021, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

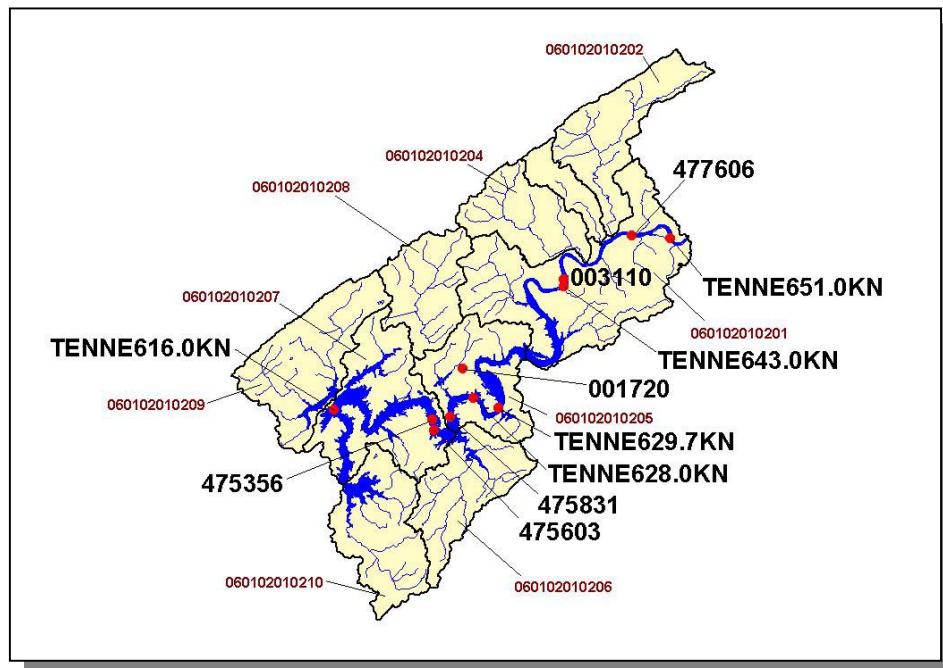


Figure 4-20. Location of STORET Monitoring Sites in Subwatershed 0601020102. Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

4.2.B.ii. Point Source Contributions.

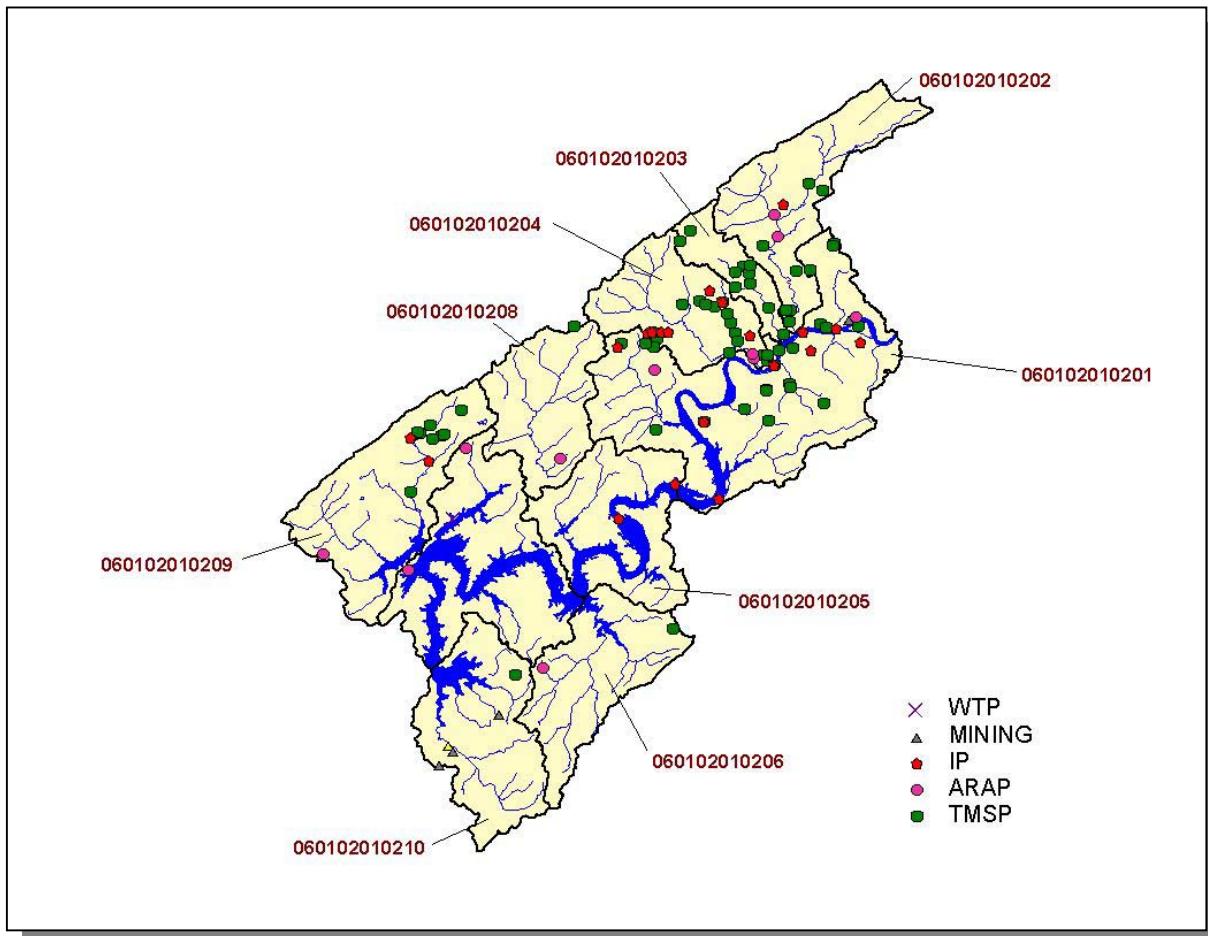


Figure 4-21. Location of Active Point Source Facilities in Subwatershed 0601020102.
Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in the following charts.

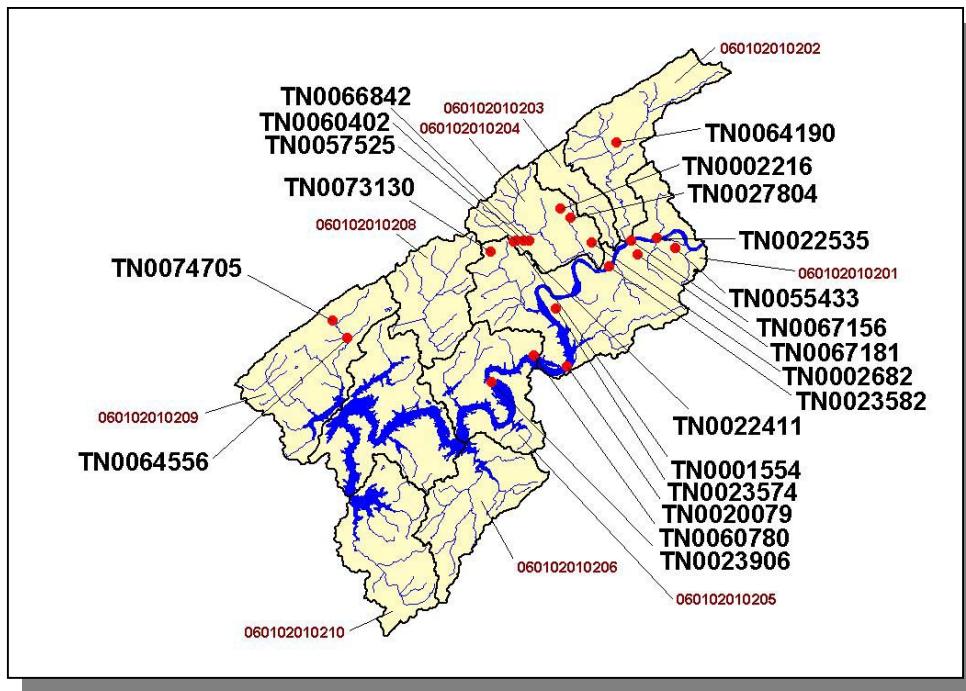


Figure 4-22. Location of Active Mining Sites in Subwatershed 0601020102. Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

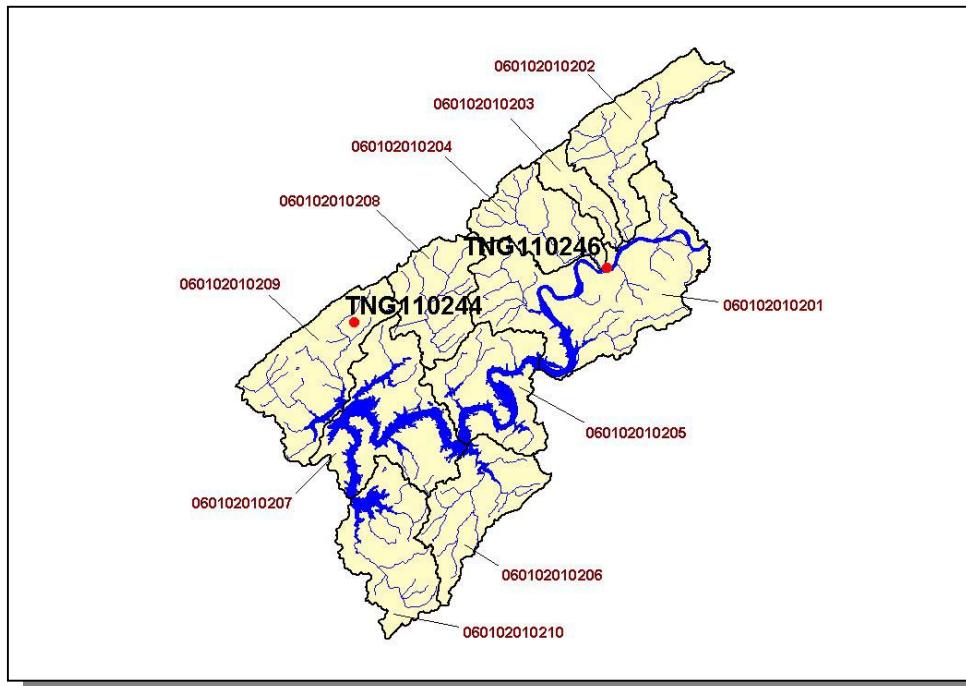


Figure 4-23. Location of Ready Mix Concrete Facilities in Subwatershed 0601020102. Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

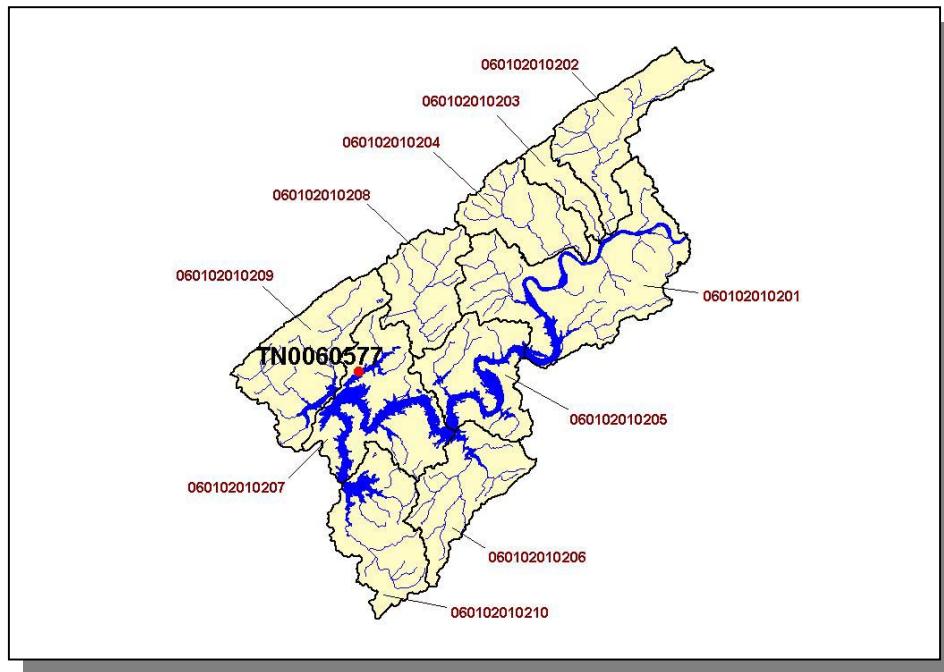


Figure 4-24. Location of Water Treatment Plant Sites in Subwatershed 0601020102. Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

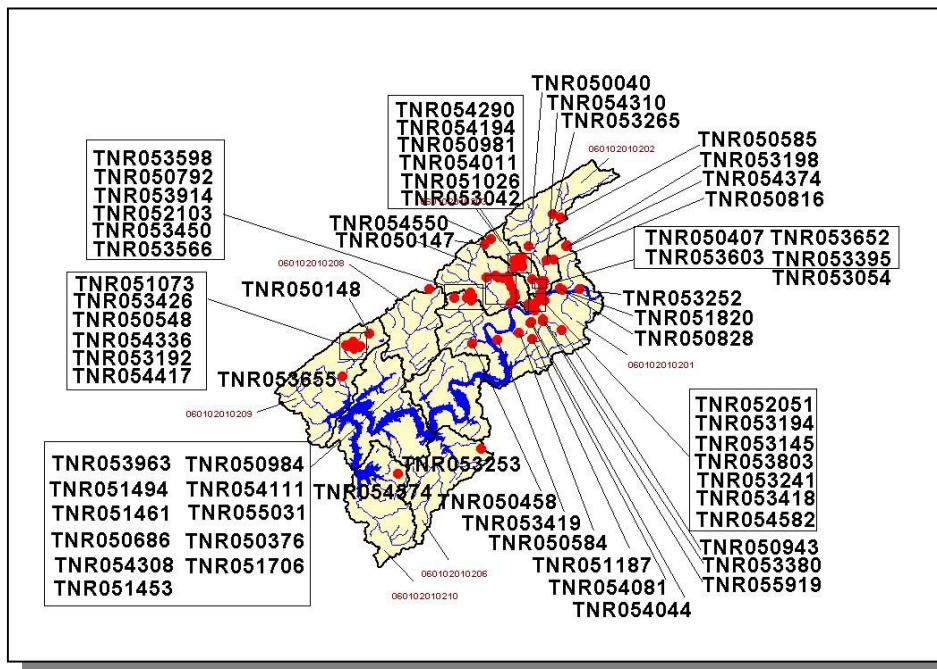


Figure 4-25. Location of TMSP Facilities in Subwatershed 0601020102. Subwatershed 060102010201, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There are eleven NPDES facilities discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0601020102:

- TN0002216 (Exxon-Mobil) discharges to an unnamed trib to 3rd Creek @ RM 5.3
- TN0002682 (Rohm and Haas) discharges to East Fork 3rd Creek @ RM 0.1
- TN0020079 (Maryville STP) discharges to the Tennessee River @ RM 637.0
- TN0023574 (KUB-4th Creek STP) discharges to the Tennessee River @ RM 640.0
- TN0023906 (Penninsula Psychiatric Hospital) discharges to the Tennessee River @ RM 632.0
- TN0027804 (Ameristeel) discharges to East Fork 3rd Creek @ RM 2.3
- TN0060402 (Cummins Terminals) discharges to an unnamed trib to 3rd Creek @ RM 5.3
- TN0060780 (Duncan's landing) discharges to the Tennessee River @ RM 635.0
- TN0064190 (B.P. Oil Co.) discharges to 1st Creek @ RM 6.2
- TN0064556 (Pilot Travel centers) discharges to an unnamed trib to Turkey Creek @ RM 4.2
- TN0066842 (Conoco) discharges to 3rd Creek

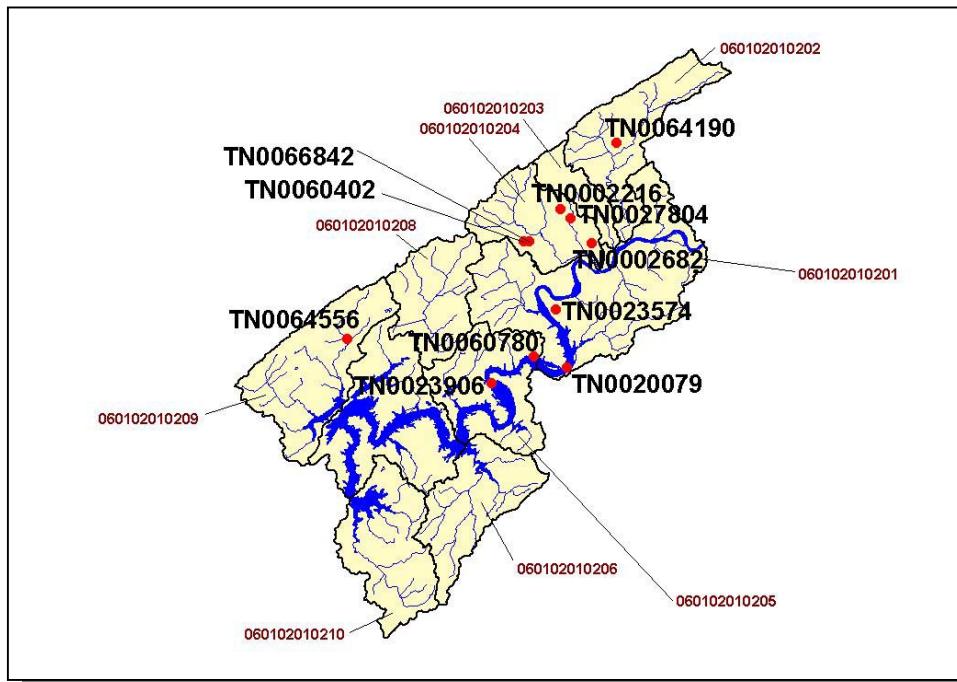


Figure 4-26. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0601020102. Subwatershed 06010201021, 060102010202, 060102010203, 060102010204, 060102010205, 060102010206, 060102010207, 060102010208, 060102010209, and 060102010210 boundaries are shown for reference. More information is provided in Fort Loudoun -Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0002216	0.00	0.00	0.00	0.00	0.01636
TN0002682				0.00	
TN0020079	30.70	31.93	33.74	28.31	10.00000
TN0023574	807.90	1182.76	1577.01	1092.28	10.80000
TN0023906	807.90	1182.76	1577.01	1092.28	0.02500
TN0027804				2.78	0.07800
TN0060402					0.00220
TN0060780					0.01200
TN0064190				0.71	0.00040
TN0064556				0.00	0.00040
TN0066842				0.00	

Table 4-14. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020102. Data are in million gallons per day (MGD). Data were obtained from the USGS publication *Flow Duration and Low Flows of Tennessee Streams Through 1992* or from permit files.

PERMIT #	TSS	BOD ₅	OIL and GREASE	P	AI
TN0002682	X	X	X		
TN0023574				X	
TN0060402					X

Table 4-15. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020102. TSS, Total Suspended Solids; BOD₅, Biochemical Oxygen Demand (5-Day).

PERMIT #	pH	NH ₃	Ag	AI	B	Cd	Cu	Mn	Pb	Zn	TRC	SETTLEABLE SOLIDS	TSS	DO
TN0002216	X											X	X	
TN0002682	X											X	X	X
TN0020079	X	X										X	X	X
TN0023574	X											X	X	X
TN0023906	X											X	X	X
TN0027804	X		X	X	X	X	X	X	X	X			X	
TN0060402	X											X	X	
TN0060780	X											X	X	X
TN0064190	X												X	
TN0064556	X											X	X	
TN0066842	X											X	X	

Table 4-16a. Inorganic Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020102. TRC, Total Residual Chlorine; TSS, Total Suspended Solids; DO, Dissolved Oxygen.

PERMIT #	FECAL	CBOD ₅	WET	BOD ₅
TN0020079	X	X	X	
TN0023574	X		X	X
TN0023906	X			X
TN0027804			X	
TN0060402			X	
TN0060780	X			X
TN0064190			X	
TN0064556	X			X

Table 4-16b. Biological Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020102.
CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); WET, Whole Effluent Toxicity; BOD₅, Biochemical Oxygen Demand (5-Day).

PERMIT #	OIL and GREASE	BENZENE	ETHYL BENZENE	TOLUENE	XYLENE
TN0002216	X	X	X	X	X
TN0027804	X				
TN0060402	X	X	X	X	X
TN0064190	X	X	X	X	X
TN0064556	X	X	X	X	X
TN0066842	X	X	X	X	X

Table 4-16c. Organic Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0601020102.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
5,057	10,323	503	14	0	273	204

Table 4-17. Summary of Livestock Count Estimates in Subwatershed 0601020102. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Blount	165.5	69.9	1.8	9.3
Knox	127.5	127.0	2.2	8.2
Loudon	62.3	62.3	1.1	3.5
Total	355.3	259.2	5.1	21.0

Table 4-18. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0601020102.

CROPS	TONS/ACRE/YEAR
Legume/Grass (Hayland)	0.20
Grass (Hayland)	0.15
Legume (Hayland)	0.77
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Corn (Row Crops)	4.92
Soybeans (Row Crops)	15.54
Tobacco (Row Crops)	2.98
Wheat (Close Grown Cropland)	4.69
Oats (Close Grown Cropland)	0.32
Grass (Pastureland)	0.72
Grass, Forbs, Legumes (Mixed Pasture)	0.40
Other Land in Farms (Other Farmland)	0.14
Non Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.20

Table 4-19. Annual Estimated Total Soil Loss in Subwatershed 0601020102.